

Application No. 09/830,907
Filed: June 19, 2001
TC Art Unit: 1754
Confirmation No.: 5302

REMARKS

Claims 1-8, 10-16, 20 and 21 are pending in the present application. Claim 1 is amended herein. Accordingly, claims 1-8, 10-16, 20 and 21 will be pending upon entry of the instant amendments.

Support for the amended claim can be found throughout the specification and encompassed by the scope of the claims as originally filed. For example, support for the amendment to claim 1 can be found, at least, for example, from original claim 4 and on page 3, lines 1-14, and/or the Example on pages 5-6 of the specification. No new matter has been added.

Any amendments to the claims should in no way be construed as acquiescence to any of the Examiner's rejections and were done solely to expedite the prosecution of the application. Applicants reserve the right to pursue the claims as originally filed in this or a separate application(s).

Claim Rejections - 35 U.S.C. §103

Claims 1-8, 10-16 and 20-21 are rejected under 35 U.S.C. §103(a) as being unpatentable over Mulaskey et al. (U.S. Patent 3,673,079) in view of Neel et al. (U.S. Patent 4,554,268). The Examiner asserts that Mulaskey et al. discloses pores above 1000 Angstroms and a pore volume of 0.25-0.4 cc/g. The Examiner also states that "the features upon which applicant relies (i.e., "a material that has 10% or more of the pore volume in the form of large pores") are not recited in the rejected claim(s)."

Applicants respectfully traverse the foregoing rejection.

Claim 1 as amended herein now recite that the invention is directed to a star shaped alumina extrudate with a pore volume, as

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determined by mercury porosimetry, of at least 0.05 ml/g and at least 10% of the total pore volume in pores of diameter of over 1000 nm, a side crushing strength of at least 50 N and a bulk crushing strength of at least 1 Mpa. Accordingly, Applicants' invention provides an optimal balance between strength and porosity, pressure drop and accessibility. In addition, the invention also provides pores with greater diameter based on the total pore volume, which is distinguishable from Mulaskey et al.

Based upon the claimed subject matter as a whole, Mulaskey et al. fails to teach or suggest having a catalyst with at least 10% of the total pore volume in pores of diameter of over 1000 nm in combination with the other elements of the claimed invention. Mulaskey et al. describes the properties of its catalyst as having a narrow pore size distribution - "predominantly micropores with diameters in the range below 1,000 Angstrom units with less than 10 percent of the pore volume being attributable to macropores having diameters above 1,000 Angstrom units." (See column 5, lines 54-59, of Mulaskey et al.) Therefore, in Mulaskey et al., more than 90% of the pores are relatively small, or below 100 nm. This results in a very high surface area of at least 300 m²/g. This is plainly distinguishable from the present invention where the majority of the pores have diameters of above 1,000 nm, where the upper pore volume limit of the invention has a low surface area, far below 300 m²/g. No suggestion or motivation can be gleaned from Mulaskey et al. to make or use the present invention with the combined properties as claimed.

Neel et al. fails to cure the deficiencies found in the primary reference. Regardless of the fact that Neel et al. fails to teach or suggest the claimed combination, Neel et al. also

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comprises having a high surface area above 300 m²/g (see, for example, column 5, line 40), which is again distinguishable from the claimed invention. Either alone or in combination with Mulaskey et al., Neel et al. fails to make the claimed invention obvious. Accordingly, Applicants respectfully request reconsideration and withdrawal of the foregoing rejection.

CONCLUSION

Based on the foregoing, entry of the amendments and remarks presented herein, reconsideration and withdrawal of all the rejections and allowance of the application with all pending claims are respectfully requested.

The Examiner is encouraged to telephone the undersigned attorney to discuss any matter that would expedite allowance of the present application..

Respectfully submitted,

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